The Ruth H. Hooker Research Library

and Technical Information Center

Software As a Library Material in Special Libraries: a Survey and Case Study

Laurie E. Stackpole

- **ABSTRACT**

To provide a picture of the efforts being made by special libraries to offer patron access to microcomputer software 50 special libraries þ for the most part, corporate, government, quasi-government, and military þ were surveyed. Those that either circulated software or provided on-site access to it were asked how they cataloged it, provided user access to it, controlled its circulation, protected it from tampering, and prevented copying. Results are presented and discussed. A case study of the microcomputer support services provided by the Ruth H. Hooker Technical Library of the Naval Research Laboratory is presented. The Library has over 450 software packages available for circulation and operates a Microcomputer Software Support Center that includes an on-site evaluation lab. The Microcomputer Software Support Center is staffed to provide product information, assistance in the identification and selection of software for specific applications, one-on-one training, and a variety of field support services, such as software installation, disk recovery, and virus-checking.

PART I: THE SURVEY

- **INTRODUCTION**

Literature searches were run in Computer Database, ERIC, Information Abstracts, Inspec, Library Literature, LISA, NTIS, and Online Chronicle. The only retrieved reference that described the handling of software as a library material in a special library cited an article, written by a former staff member, describing efforts by the Ruth H. Hooker Technical Library at the Naval Research Laboratory (Rettenmaier, 1989). Even though librarians in special libraries were apparently not writing about their activities in handling software as a library material, I knew of some special libraries that were circulating software or making it available to users on site; I was quite sure there were others as well.

To test this supposition, I decided to contact some likely prospects and find out what they were doing. My goal was to contact about thirty libraries by telephone. To select the libraries to be contacted I drew upon personal contacts, referrals from directors of library systems and networks, and published directories of corporate and special libraries.

- **IDENTIFYING THE LIBRARIES**

In 1988 I had presented a paper at the Special Libraries Association Annual Meeting. At that time I had told those attending my session that I would be writing an article for Library Trends and asked those who would be able to provide some input to give me their business cards. Eight of those cards represented special libraries and those were the first people I attempted to contact.

The next set of names were three libraries all government that I knew were doing something with microcomputer software. Then came the recommendations of library coordinators for the Army library

program, the Army Corp of Engineers, the Air Force, and NASA. My own list of "likely prospects" followed, which included the National Laboratories, a number of private sector research institutions, and suggestions made by colleagues.

To obtain some representation from corporate libraries in the areas of chemicals, energy, pharmaceuticals, insurance, investment, and banking, I selected 11 libraries from the SLA publication From the Top: Profiles of U.S. and Canadian Corporate Libraries and Information Centers (Brimsek, 1989) and 7 others from Who's Who in Special Libraries, 1989-1990, the annual membership directory of the Special Library Association.

That gave me an unscientific sample of 59 libraries. We were successful in contacting 53; however three of those declined to participate, leaving a total of 50 (See APPENDIX A), who participated in the survey. Although special libraries active in each of the fields mentioned above were represented, the highest concentration was scientific and engineering libraries. This bias was undoubtedly due to the way I went about creating the "sample."

- **THE SURVEY INSTRUMENT**

Rather than reinvent the wheel to develop a survey instrument, I modified a survey on microcomputer software policies distributed to academic libraries in 1985 by the Microcomputer Software Acquisitions Policy Committee of the Association of Research Libraries. The resulting survey instrument (APPENDIX B) consisted of 10 questions. All libraries were contacted by telephone during December 1990 and January 1991. Various staff administered the survey. Each was provided with a script (APPENDIX C) to use in explaining its purpose.

Through the survey I hoped to get information first of all about patron use of software in special libraries: what kind of access was available and to what type of software, i.e. public domain, shareware, or commercial (Questions 1 and 2). I also wanted to know if libraries were employing any special procedures in the procurement of software that do not normally apply to books and other traditional libraries materials, specifically were they obtaining site licenses or engaging in other negotiated agreements (Question 3). The next two questions dealt with how patron-use software is controlled and accessed. Was it cataloged like other material, most probably using AACR2, or was some other approach used (Question 4)? Were patrons alerted to its availability through the main catalog, specialized listings, or other techniques (Question 5)? To learn about restrictions on software that may not apply to other library materials, I then asked about circulation policies (Question 6). Next I addressed issues inherent in the physical medium itself. Do libraries take any special precautions to prevent tampering with software and if so what are they (Question 7)? Do libraries take any special precautions to prevent copying of software and if so what are they (Question 8)? To provide an organizational perspective, I then asked if anyone else in the organization was providing software support services, including lending, on-site evaluation, information about capabilities, or recommendations of software programs for particular applications (Question 9). The final question was a request for referrals to other libraries that were involved in using software as a library material (Question 10).

- **RESULTS**

  - Of the 50 libraries surveyed, 21 were handling software as a library material, which in my terms meant they were either circulating it to users or providing on-site access.

  - Of the 21 libraries providing patron access to software, seven were providing on-site use only; six were involved in circulation only; eight were doing both (Figure 1a). Of these 21 libraries, 13 were offering access to commercial software only, 4 to public domain or shareware, 3 to commercial as well as public domain or shareware, and 1 to unspecified software that was none of the three types (Figure 1b).

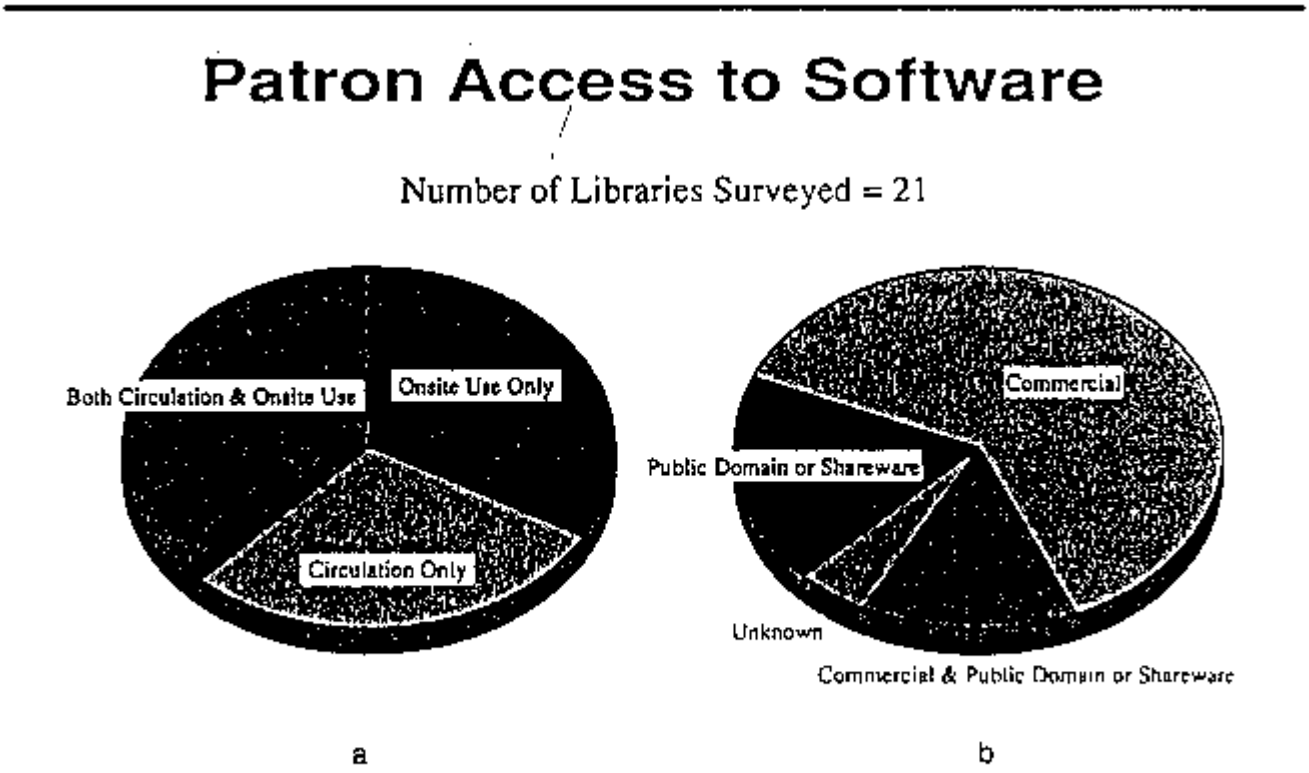


Figure 1. Results of survey by type of access (a) and type of software (b)

- Of the six libraries that were only circulating software, five were handling commercial software only, and one was handling public domain and shareware but no commercial. Of the seven libraries that were providing on-site access only, four were providing such access only to commercial software, two were also providing access to public domain and shareware along with the commercial, and one library providing on-site access said it was to none of the three.

- Of the eight libraries that were both circulating software and providing on-site access, four were dealing with commercial software only, two were dealing with public domain only, one with public domain and shareware, and one with all three.

- On the issue of site licenses or other specialized agreements, I found only two libraries who could say for sure that they had obtained site licenses before making software available to users. One was a library that circulated software and the other a library that provided on-site use. Two other libraries were not sure whether they had site licenses. Three libraries had negotiated agreements and one library was not sure. The negotiated agreements applied to one library that provided circulation of software only, one library that provided on-site access only, and one library that offered both types of service.

- Eleven libraries were found to catalog software using AACR2. Ten of these were among the 14 libraries that circulated software. However of these eleven libraries cataloging software using AACR2, only six said they informed users about software availability through their main catalog.

- All six of these libraries that include software in their main catalog were using AACR2, although some said "with modifications." Five of the six were libraries that circulated software. Of the six libraries that included software in their main catalog, three also made use of specialized listings; none mentioned any other alerting mechanisms. In all, nine libraries mentioned specialized listings as a way of informing users of software availability; eight of these were libraries that circulated software. Three libraries using specialized listings also used other means to inform users. Five libraries offering circulation and one library with on-site access only relied solely on other means to inform users. Among the other means mentioned were: online announcements, E-Mail, BBS, network announcement, closed circuit TV, base or laboratory newspaper, newsletter, special announcement, ad at circulation desk, and in-person.

- Of the 14 libraries circulating software, 11 had some type of restriction on software that did not apply to other library materials. Most often cited was a restriction on the loan period; two libraries mentioned restrictions on who could borrow software.

- Of the 14 circulating libraries, 10 took some steps to protect software from tampering. Seven libraries mentioned write-protected disks, three mentioned protective packaging, four mentioned virus-checking upon return, and two mentioned other means that were specified as circulating back-ups rather than originals and maintaining back-ups on a minicomputer accessible over a network as read only files. Libraries frequently used a combination of approaches. For example, only three relied exclusively on write-protected diskettes and one relied exclusively on virus-checking.

- Nine libraries that circulate software employed some means to protect software from duplication. Eight of these nine are libraries that circulate commercial software. The most common approach was copy protected diskettes (four libraries), followed by user agreements (three libraries). Other techniques used by one library each were warnings on the screen when the software was loaded (used by a library circulating only public domain software) and warnings on the diskettes. One library mentioned use of the vendor's copyright as a deterrent. In all but one case libraries limited themselves to a single approach to prevent duplication. The library that was the exception to this rule utilized both copy protected diskettes and user agreements.

- Of the 21 libraries providing some patron access to software, 17 provided information about whether someone else in their organization was providing any of four software support services. Seven of the 17, about 40%, responding to this questions said no one else was providing any services; of the 10 others, five said someone else in the organization lent software for test and evaluation, four each said someone else provided information about software capabilities and made recommendations, and two said someone else was operating an on-site evaluation lab.

- Of the 29 libraries who were providing no patron access to software, 20 provided information about software support provided by someone other than the library. Fourteen respondents or 70% said no one else was providing any software support. Of the six organizations where software support was being provided outside of the library, four said someone else provided information about software capabilities, four said someone else made recommendations on packages, two said that someone else was lending software, and two said someone else was operating an evaluation lab.

DISCUSSION

As a group, libraries of the U.S. Army Corps of Engineers were most heavily involved in providing access to software. Of seven libraries contacted, four were circulating software, and one providing on-site access. On the other hand, I was surprised to find that none of the National Laboratories contacted were involved in handling software. The same was true of many of the larger, more prestigious laboratories affiliated with corporations. I would surmise that this may be that in larger research organizations, other components, such as computer staffs, provide software support. As a case in point, many of the larger Navy Laboratories operate microcomputer support centers. These operate independently of their libraries. Some of these centers both circulate software and provide on-site access.

However the analysis of Question 9 in which libraries were asked "Does someone else in your organization provide any of the following software support services . . . ?" does not appear to support this supposition. This question was intended to elicit data on services provided outside of the library. If that was indeed understood by the respondents, the results are quite surprising. The analysis of replies would show that software services outside the library existed for only 30% of the "no software" libraries that answered the question. Conversely software services outside the library existed for almost 60% of the software-access libraries that answered the question. There is the possibility that this question was misinterpreted by the respondents. The interpretation could have been that the library was the organization referred to, and that we were seeking information on other services the library itself provides. On the other hand if the answers do reflect what's truly happening, it may show that when special libraries provide access to software it is in an environment where microcomputer use is already well supported.

When special libraries provide access to software, commercial software is offered by most (76%). Less than 20% of the libraries overall limit themselves to public domain software or shareware. Most libraries apparently believe they are operating within copyright restrictions without making any special arrangements with publishers, since only between one-fourth and one-third have entered into site licenses or negotiated agreements with publishers. The fact that some libraries did not know what arrangements may have been made is not as surprising as it first appears; in many organizations software purchases are managed by a computer support component, which makes the arrangements before providing the software to the library.

I was personally surprised by the few libraries that said they inform users of software availability through their main catalog, fewer that 30% overall (35% if only circulating libraries are considered). This is particularly puzzling because more than half the libraries catalog software using AACR2. A figure that rises to more than 70% for the circulating libraries.

Although few libraries mentioned restrictions on who could borrow software, I suspect most limit all circulation to employees of the organization, and consequently did not see that as a special restriction on software loans. One library mentioned that only technical center staff could borrow software, another said circulation was restricted to project managers Various loan periods were mentioned, the most common being two weeks.

Of the libraries that lend software, over 70% make some attempt to prevent tampering. The exclusive dependence of a small number of libraries, 21%, on write-protected diskettes or on write-protected diskettes in combination with protective packaging (28%) to prevent tampering is worth commenting on. Since write-protect tabs can often be removed with ease, this is a protection only against inadvertent alterations to the disk; it does little to prevent deliberate tampering. Protective packaging although mentioned by three libraries was always used in combination with some other approach, either with write-protected diskettes (one library) or with virus-checking (two libraries). In and of itself, protective packaging only serves to prevent inadvertent physical damage to the disks; it does not protect the software itself from damage or alteration or, even more critical, infection by viruses. The few libraries performing any type of virus-checking, (three) is disturbing, but understandable. Adding the requirement to check each package after circulation certainly complicates the process. However, one good virus scare could put the library in a very unfavorable position and put an end to its software circulation efforts permanently.

Of those libraries circulating commercial software (10), only two apparently make no effort whatsoever to prevent copying. The techniques used run the gamut from making it physically difficult to copy to simply putting the user on notice that copying is prohibited. User agreements and notices on diskettes or on the screen are variants of the latter approach as is dependence upon the vendor's notice of copyright. Half the libraries circulating commercial software used at least one of these approaches. However I found it somewhat surprising that more libraries were not labeling software with a copyright notice in anticipation of the Computer Software Rental Amendments Act of 1990, enacted Dec 1, 1990. This law, amends Section 109 (b) of the Copyright Act to prohibit the commercial rental, lease, or lending of computer software (Raysman & Brown, 1990). An exemption permits the lending of a computer program for nonprofit purposes by a nonprofit library, but requires libraries lending software to affix to each software package a notice of copyright, which will be specified by the Register of Copyrights. During the drafting of this legislation, one proposal for wording of this notice read: "Warning: This computer program is protected under the copyright law. Making a copy of this program without permission of the copyright owner is prohibited. Anyone copying this program without permission of the copyright owner may be subject to payment of up to $100,000 damages and, in some cases, imprisonment for up to one year."

- **SUMMARY**

Of those special libraries found to be circulating software or providing on-site access for patrons, most were handling commercial software, although few had entered into on-site license or other agreements with publishers. For the most part libraries rely on means other than the main catalog to alert users to the availability of this material, although the majority of libraries that circulate software do catalog it. Circulation policies often limit the length of time that software can be charged out and may also restrict who may borrow it. Most libraries try to protect software that they circulate from tampering. Libraries circulating commercial software were found on the whole to be making efforts to protect it from copying.

PART II: THE CASE STUDY

- ## INTRODUCTION

The Ruth H. Hooker Technical Library is a scientific research library that serves the researchers and administrators of the Naval Research Laboratory (NRL). The Laboratory has about 3,000 employees with about half actively engaged in research. About 1000 on-site contractors are also engaged in the research effort. NRL occupies a 130-acre campus of 152 buildings located on the Potomac River in Southwest Washington, D.C. The research efforts of the Laboratory are concentrated in 17 broad areas: acoustics, advanced space sensing, artificial intelligence, astrophysics, biotechnology, chemistry, condensed matter science, information technology, materials research, optical sciences, plasma physics, radar and electronics, radiation technology, remote sensing, space science, space systems, and structural dynamics.

For over 60 years, the Library has served as a focal point for meeting the information needs of the Laboratory. Contributing to the Library's success as an information provider is an excellent research collection of books, journals, and reports, selected for relevancy to the NRL mission and interest areas. To provide users with intellectual and physical access to these holdings, emphasis has been placed on the creation of tools such as indexes and catalogs, now largely automated, and the establishment of an environment that encourages users to frequent the stacks and provides facilities for in-house use and the ability to borrow many materials. Over the last two decades, online subject and mission-oriented databases (some now available in-house on CD ROM) have become increasingly useful in helping investigators search the entire universe of information to identify sources relevant to their inquiries, and participation in a world-wide bibliographic network (OCLC) allows the Library to locate and request such sources from other libraries electronically.

During its first 60 years, the Library dealt primarily with print media, language tapes being the single exception. However, in 1987, the Library began to consider adding microcomputer software to the types of material with which it deals. The impetus for expanding library collection and services into the microcomputer software area was a proposal by an NRL researcher to the Laboratory's Computer Policy Panel, which recommended that the Library purchase software for employees just as it purchases books and journals. Although such expanded procurement authority was not granted, once the Library's role in supporting Laboratory software needs was addressed, several avenues for improving software availability and facilitating its implementation and use became evident. The first of these to be pursued was a software lending program, paralleling the circulation of bibliographic materials. A concurrent effort was the expansion of reference services to assist users in the identification and selection of microcomputer software for particular types of applications. After a period of planning and implementation, the Library opened a fully equipped and staffed Microcomputer Software Support Center that currently provides software information, evaluations, and selection advice; offers hands-on experience and one-on-one instruction in the use of software; and assists users in solving installation, compatibility, and virus problems.

- ## SOFTWARE CIRCULATION

In July 1988, the Ruth H. Hooker Technical Library of the Naval Research Laboratory first added commercial software packages to the materials it lends to Laboratory staff, starting with 10 of the most popular programs for IBM-compatible computers. This was a point of departure for the Library in meeting Laboratory information needs arising from the increasing use of microcomputers for both office and laboratory applications. Getting software into the hands of the users so they could test and evaluate it on their own machines was a major step beyond earlier Library efforts to provide staff with information about software through the purchase of relevant materials and searches of computerized databases covering the computer field.

Steps to Discourage Software "Piracy"

Underlying the circulation of software are a number of carefully worked out controls and procedures to assure that the rights of the software publisher are properly observed. The Library worked with the NRL Counsel to develop these procedures. To ensure that all users understand that the purpose of the lending

program is to provide software for test and evaluation only, users are asked to register as software borrowers by signing an agreement. This agreement states that they will not make nor allow others to make copies, and that while the software may be copied to a hard disk for test and evaluation, any such copy will be erased before the package is returned to the Library (Figure 2). Only users who have signed this agreement are entered into the Library's computer system as authorized software borrowers.

Name Code Telephone

AGREEMENT FOR BORROWING COMMERCIAL SOFTWARE FROM THE NRL LIBRARY

I understand that U.S. Copyright Law prohibits the unauthorized copying of copyrighted software. In borrowing such software from the Library I agree to observe the prohibition against copying:

(1) I will not copy software to another diskette;
(2) If software is copied to a hard disk for test or evaluation, I will erase the copy *before* returning the software to the Library;
(3) I will control access to the software so that illicit copying by others does not occur.

I understand I may be asked to sign a statement upon the return of the software to the Library verifying that no copies made by me, or by others while the software was charged out to me, are in existence.

Signature Date

Figure 2. Agreement card to register as a software borrower

As a psychological deterrent to copying, originals with the vendor's notice of copyright are circulated rather than copies. The back-up copy permitted under copyright law is retained in a secure area in the Library and is used only if the circulating copy is in some way damaged.

To be sure that users are continually kept aware of the fact that they are dealing with copyrighted material, each disk is labeled with information about copyright restrictions (Figure 3). Furthermore, upon returning the software to the Library, each user must verify in writing that no other copy exists (Figure 4). This verification is made on a card that is specific to the software that has been used; these cards, with the signatures of the various borrowers, are retained permanently. Should a question later arise about the illegal use of software from the Library's lending collection, responsibility can be traced to the user.

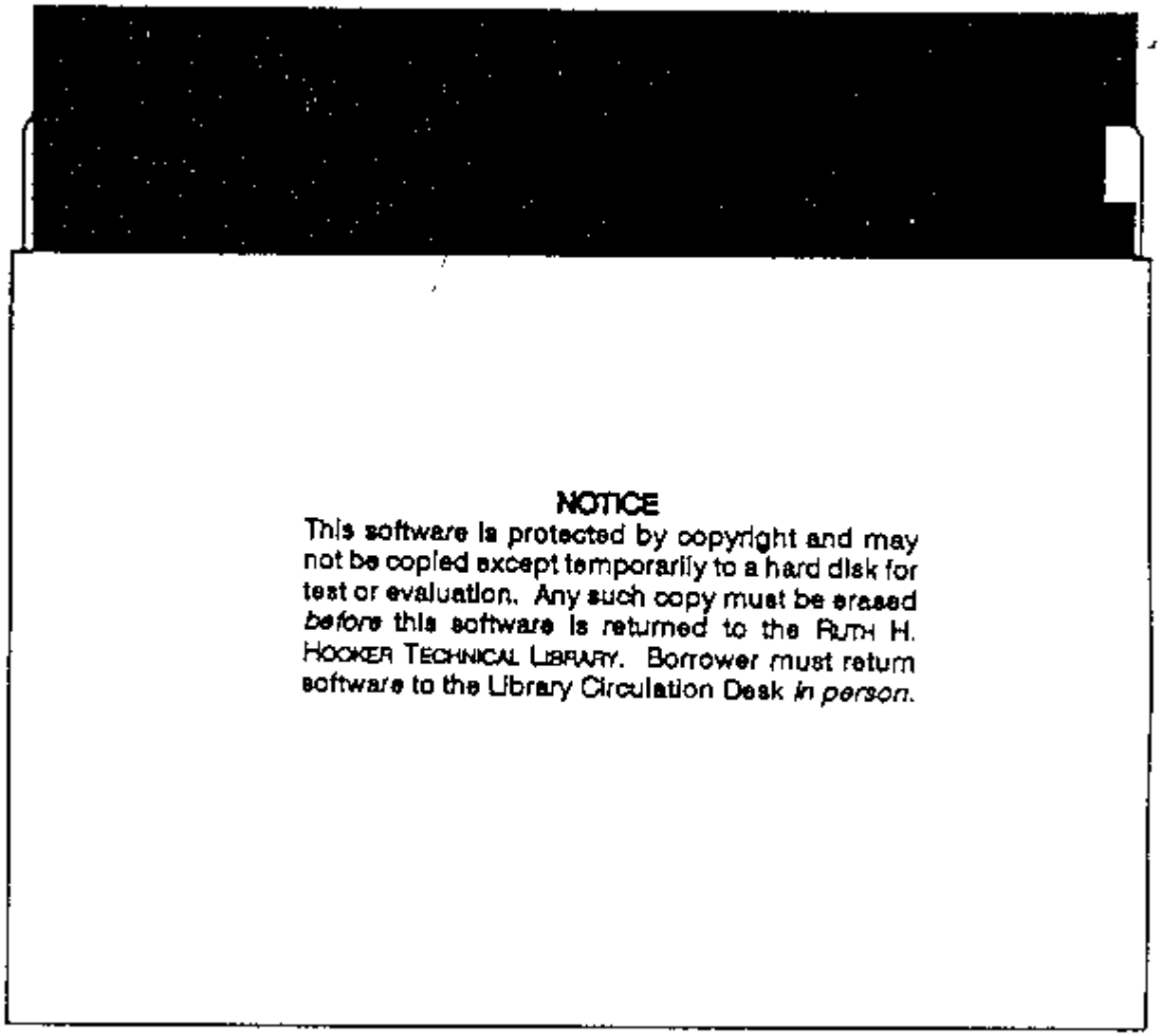
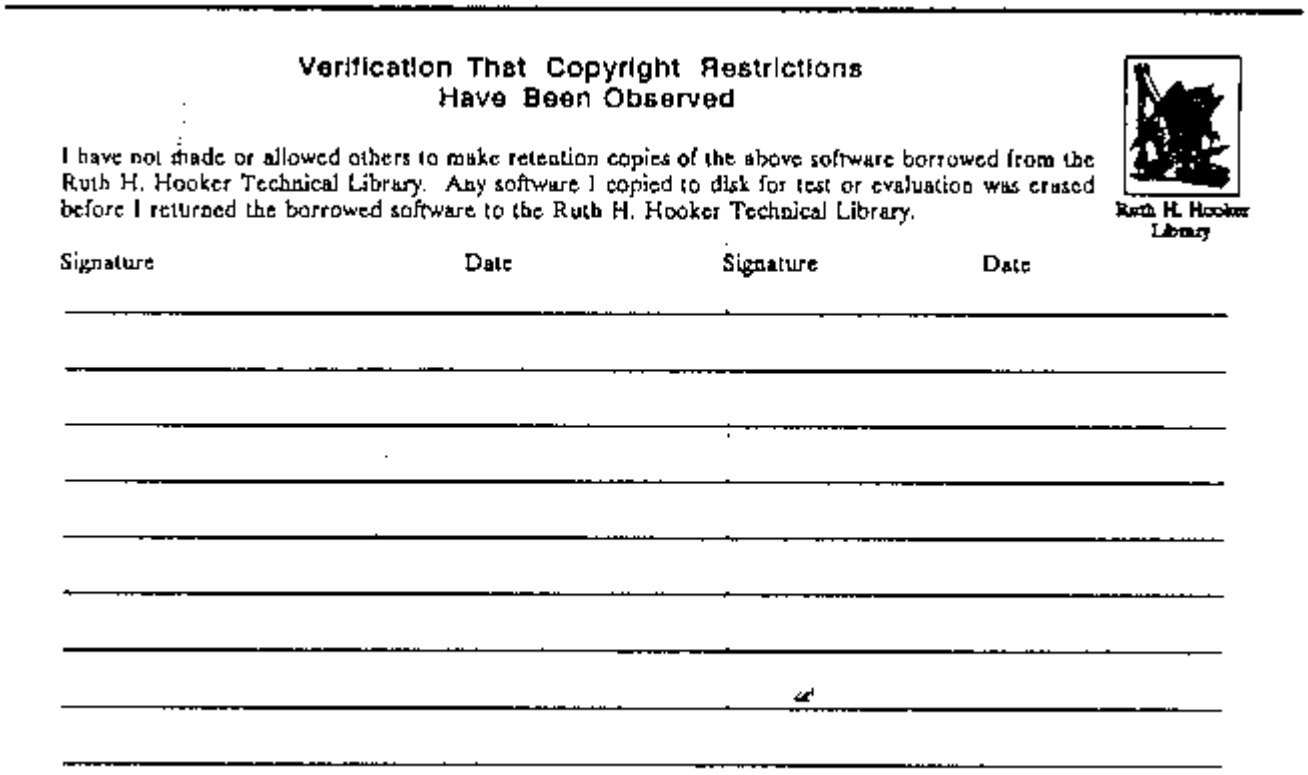


Figure 3. Notice of copyright label for software diskettes



Verification That Copyright Restrictions
Have Been Observed

I have not made or allowed others to make retention copies of the above software borrowed from the Ruth H. Hooker Technical Library. Any software I copied to disk for test or evaluation was erased before I returned the borrowed software to the Ruth H. Hooker Technical Library.

Ruth H. Hooker Library

Signature Date Signature Date

Figure 4. Certification that software has not been copied

Keeping Software Intact

To provide the user with assurance that the software is complete and virus-free, after each circulation the software is checked for viruses, using anti-viral programs that check for specific viruses as well as for changes in the disk. As the computer used for checking has no hard disk, it can not itself become infected. If software is found to be altered in any way, which has happened a few times, the user is alerted to the fact that a virus may be lurking in his or her computer. The contaminated copy is repaired before circulation to the next user.

When a software package first arrives in the Library, a "spec sheet" is prepared (Figure 5). Each spec sheet provides, at a minimum, a brief description of the software, usually extracted from the manual, a complete list of the contents of each package, and the system specifications necessary to run the software. In addition, a spec sheet may present a list of key features or, in the case of a software upgrade, outline the differences between the new version and the previous version. Upon its return to the Library, each package, which often comprises more than 20 individual items, is checked against the spec sheet contents list to be sure it is complete. The user is not relieved of responsibility for the software until all parts are returned, nor is the software made available to the next user until it is complete.

ORACLE FOR MACINTOSH

Oracle for Macintosh v1.1 by Oracle 26 Jan 90

"Oracle for Macintosh is a relational database management system. This software features multi-user support, optimatization techniques, array interfaces, transaction processing and many SQL programming tools".

Contents:

Oracle for Mac References
Oracle for Mac Error Codes
Oracle for Mac Primers
Oracle for Mac Getting Started
Oracle for Mac Stacks
Oracle for Mac System Release Bulletin
Program Disks #1-3.....3.5"
Database File Disk #4.....3.5"
Related FIles Disk #5.....3.5"
Stacks Disks #6-7.....3.5"

System Requirements:

Macintosh SE/SE30, Macintosh II, or IIx
2 megabytes of internal memory
A hard disk with at least 5 megabytes of disk space available
System 6.0 or later
Finder 6.1 or later
Hypercard version 1.2

Key Features:

SQL PLus
Pro*C
Hypertalk
Oracle runs from within Hypercard

Figure 5. Spec sheet for software package

One of the problems we encountered in circulating software is that the packaging is not always very sturdy. After several uses, we frequently wound up with packages that were held together so insecurely with tape and rubber bands that we were afraid users would lose pieces en route. Our first approach to solving this problem was to buy a number of throw-away plastic bags imprinted with the official library symbol. These were easy to store and served the purpose for all but the most bulky packages. Later, at the suggestion of one of our staff, we looked into the purchase of reusable canvas bags. These could be ordered in a size large enough to accommodate all software and imprinted with our own logo and wording of our choice. We held an in-library contest to come up with a slogan for these bags. The winner was "Research . . . It's in the Bag." We purchased 100 bags, 13 x 12 x 4, in navy blue canvas; they are stamped on one side in white with our logo, an owl sitting on an anchor and looking through a microscope, with the slogan in a semi-circle above, and "NRL Technical Library" below. Bags are bar-coded and checked out to users along with their software. They have an added value beyond their utility for protecting software in transit; as people carry them about, they serve as walking advertisements for the Library.

Circulation Policies

When the Library first began to circulate software, only NRL employees were authorized as borrowers.

However, since the Library circulates books and other materials to on-site contractors, this restriction met with a certain amount of resistance, both from the contract staff and from the NRL researchers and administers who rely upon on-going contractor support in conducting the Laboratory's research program. It soon became evident that researchers were working around our restriction on lending software to contractors; our authorized borrowers were checking out software and then turning it over to contract staff to test and evaluate. Since this practice meant that the employee who had accepted responsibility was not in full control of the software and the Library had no record of who actually had it, we decided it was in the best interests of all to extend software access to on-site contractors. The General Counsel determined that this presented no legal problem, so about a year into the program, we made that change.

Unlike books or other library materials, which can be returned by internal mail or by a secretary or colleague, software must be returned in person by the borrower; upon return of the software, the borrower is required to certify in writing that no other copies of the software are in existence. Because our scientists are busy people and many of them are frequent travelers, this is, to say the least, not a popular policy. So that people will know up front that returning the software in person is an absolute requirement, we include this information as part of the initial user agreement. However, we have had to remind people from time-to-time and on more than one occasion, a Library staff member has had to ask someone to come to the Library to provide the required signature.

Although it is not essential that software that is to be checked out be picked up in person by the borrower, it is the Library's policy not to charge out software indiscriminately in someone else's name. In other words, if a user has called and requested a package or has been notified that previously requested software is available, the user can ask a secretary or a colleague to pick up it up. However, if someone selects a package and then tells us it is for someone else, we do not charge it to the absent party without expressed consent. In other words, the Library will not allocate responsibility for software to someone who may be unaware that this is happening.

The loan period for software is two weeks with one renewal permitted if there is no waiting list. Renewals may be made by phone. Our loan period for books is one month with two renewals, except for materials with a waiting list where it is two weeks with no renewals. The two-week loan period for software was arrived at somewhat arbitrarily; we were striving for a balance between the time required to test and evaluate the software and the objective of making each package available to as many people as possible. For those who have the software in their hands, we are often told that two weeks is incredibly short; for those who are waiting for the software þ and waiting lists are sometimes quite long þ we are often told two weeks is too long. In estimating how long a person may have to wait for a package to become available, we add several days to the two week loan period. Not everyone returns material promptly. In such cases, we telephone users immediately and remind them that the software is due. With good luck this gets the package back to the library within one or two days. If the contents are complete and the virus check goes well, the package will be ready to go out again within one or two days. Since it has to be picked up in person, we telephone the next user, say it is available, and allow three days, counting the day of the call, for pick-up. The two weeks start only when he has the software in the hands of the user. If the person at the top of the waiting list is not available or declines the software, that name drops down to the number two position on the list and person who was next in line rises to the top. If on the other hand, the prospective borrower simply fails to pick up the software, that name drops to the bottom of the waiting list.

User Assessment

About 6 months into the program, all registered software borrowers were surveyed on their satisfaction with the lending program. Eighty users responded to this survey; 49 rated the program as excellent, 30 as satisfactory, and 1 as poor. (The one poor rating was by a user who had not yet received a popular program for which he had been waiting for some time.) Fifty-six believed the capability to "try before you buy" had saved them money. All recommended that the Library continue the program. A large number of respondents included comments on specific ways they had benefitted from the program. Many were variations on the theme that by testing and evaluating software they had avoided making inappropriate purchases (Figure 6).

From March 1989 Survey

WHAT THE USERS SAY

Extremely useful in evaluating prospective purchases of software. Keep up the good work!

Has allowed me to decide whether to buy a program or which program is best. This is an excellent service!

It kept us from buying software that wasn't what we wanted.

So far, very useful - opportunity to try out some of the current software.

Replaces "traditional" practice of stealing undocumented software and therefore provides better assessment of value.

Can get beyond the hype and see actual professional performance of software.

Actual software certainly more effective evaluation than demo disk. Did not have to listen to sales pitch. Saved time.

The program provides a broader understanding of what a computer can do for you.

Probably more useful to the majority of laboratory's personnel than many book purchases.

Figure 6. Typical responses to user survey on software lending

At the end of 1990, 753 users were registered as software borrowers. Circulation (check-outs) during the last half of the year were averaging 136 per month, with a high of 213 during August and a low of 116 during December.

- **ANNOUNCING SOFTWARE AVAILABILITY**

Making software available is only part of the equation; the other part is letting users know what software is

available.

Access through the Library's Automated Catalog

All software is cataloged using a simplified version of the MARC Computer File Format and AACR2. We use OCLC to create a catalog record, which is downloaded into our library automated system (LS/2000); we do not, however, add our software records to the OCLC databases, as our cataloging is non-standard and our software is not available for interlibrary loan. An OCLC record, modified to meet NRL specifications, is shown in Figure 7. The title, usually as shown on the disk(s), is always selected as the Main Entry (245 field). If there are variants of the title, including spelling as one word or two, they are entered into the 740 field, which is searchable.

```
 Screen 1 of 2
NO HOLDINGS IN NRL - FOR HOLDINGS ENTER dh DEPRESS DISPLAY RECD SEND
 OCLC: 22191901     Rec stat: n Entrd: 900807        Used: 910123
Type: m Bib lvl: m Govt pub:   Lang:  N/A Source: d Frequn: n
 File: b Enc lvl: I Machine:    Ctry:  cau Dat tp: s Regulr:
 Desc: a Mod rec:   Audience:   Dates: 1990,
  1 010
  2 040      OCC c OCC
  3 090      SOF IBM b .H34 v2.3
  4 049      NRLL
  5 245 00   Harvard graphics h computer software
  6 250      Version 2.3.
  7 260      Mountain View, Calif. : b Software Pub. Corp., c c1990.
  8 300      5 computer disks + e 2 manuals (loose-leaf in one binder in box)
  9 505 0    Draw Partner (user's manual) -- Harvard graphics user's guide
[manual] -- Autographix overnight slide service (1 sheet) -- Harvard graphics
accessories (flyer) -- 5 computer disks at 3 1/2 in.
 10 650  0  Computer software.
 11 650  0  Computer graphics x Computer programs.
 12 650  0  Harvard Graphics (Computer program)

 Screen 2 of 2
 13 710 20  Software Publishing Corporation.
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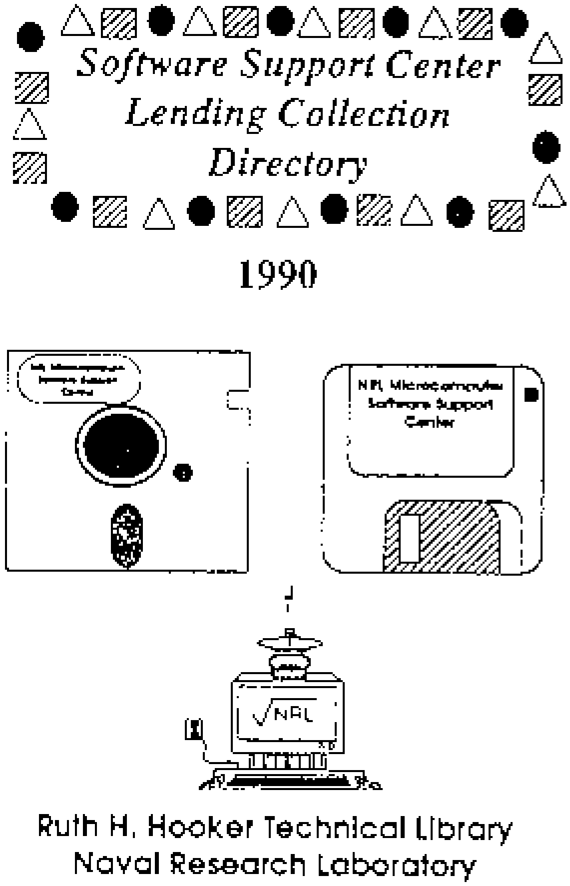
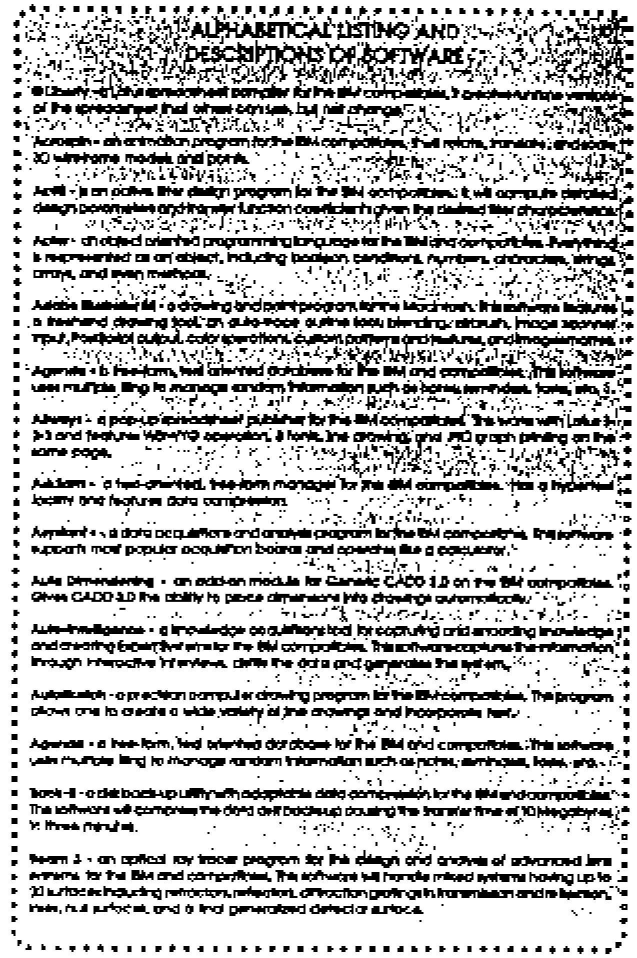
Figure 7. OCLC Cataloging Record Modified to NRL specifications for software

Although we use L.C. Call Numbers for our book holdings, we devised a custom call number system for software, which we maintain separately from the rest of the collection but organize for ease of access. All software is given a call number that starts "SOF." The next part of the call number designates the operating system, either "IBM" for DOS software or "MAC" for Apple Macintosh software. A Cutter number is established based on the title established by the cataloger as the main entry. The version or release of the software forms the final part of the call number. For example, the call number for Version 4.0 of Microsoft Word is SOF IBM .M586 v. 4.0. This system keeps all software together, grouped by operating system, and sequenced by title and version.

Specialized Catalogs, Announcements, and Other Alerting Mechanisms

Printed catalogs listing software in the lending collection are issued periodically, made available within the Library, and widely distributed throughout the Laboratory (Figure 8a). The most recent catalog presented an alphabetical listing of all available packages with a brief description (Figure 8b) and also listed software by operating system and application (Figure 8c and d).





ALPHABETICAL LISTING AND
DESCRIPTIONS OF SOFTWARE

[illegible] compiler for the IBM compatibles. [illegible] of the spreadsheet that others can use, but not change.

Acrospin - an animation program for the IBM compatibles, that rotates, translates, and scales 3D wireframe models and points.

Actfil - is an active filter design program for the IBM compatibles; it will compute detailed design parameters and transfer function coefficients given the desired filter characteristics.

Actor - an object oriented programming language for the IBM and compatibles. Everything is represented as an object, including boolean, conditions, numbers, characters, strings, arrays, and even methods.

Adobe Illustrator 88 - a drawing and paint program for the Macintosh. This software features a freehand drawing tool, an auto-trace outline tool, blending, airbrush, image scanner input, PostScript output, color operations, custom patterns and textures, and image enhancements.

Agenda - a free-form, text oriented database for the IBM and compatibles. This software uses multiple filing to manage random information such as notes, reminders, forms, etc.

Always - a pop-up spreadsheet publisher for the IBM compatibles. The [illegible] with Lotus 1-2-3 and features WYSIWYG operation, 8 fonts, line drawing, and PIC graph printing on the same page.

AskSam - a text-oriented, free-form manager for the IBM compatibles. Has a hypertext facility and features data compression.

Asyst - a data acquisitions and analysis program for the IBM compatibles. This software supports most popular acquisition boards and operates like a calculator.

Auto Dimensioning - an add-on module for Generic CADD 3.0 on the IBM compatibles. Gives CADD 3.0 the ability to place dimensions into drawings automatically.

Auto-Intelligence - a knowledge acquisitions tool for capturing and encoding knowledge and creating Expert Systems for the IBM compatibles. This software captures the information through interactive interviews, defines the data and generates the system.

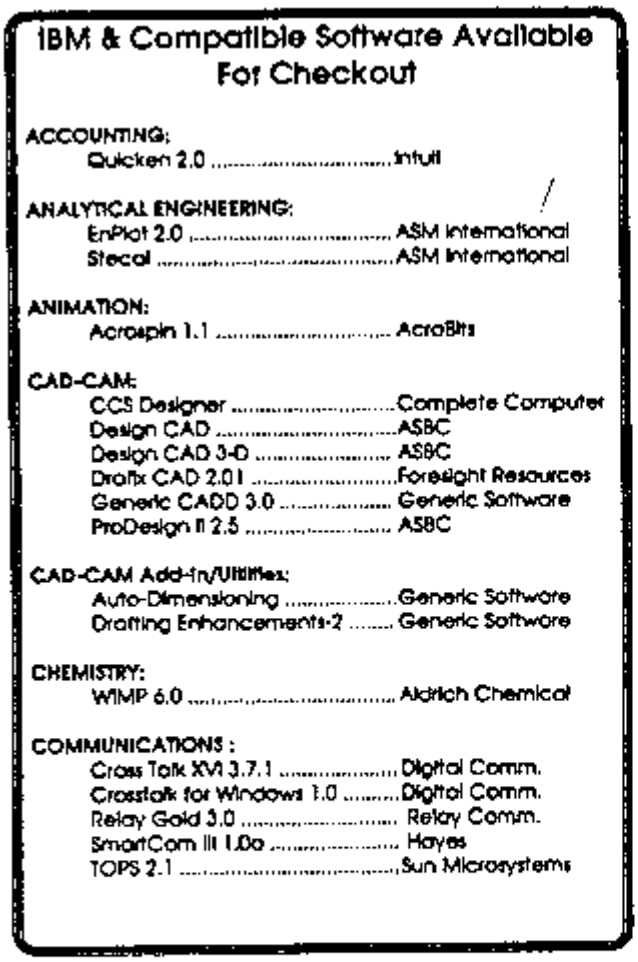
AutoSketch - a precision computer drawing program for the IBM compatibles. The program allows one to create a wide variety of line drawings and incorporate text.

Agenda - a free-form, text oriented database for the IBM and compatibles. This software uses multiple filing to manage random information such as notes, reminders, forms, etc.

Back-It - a disk back-up utility with adaptable data compression for the IBM and compatibles. The software will compress the data as it backs up, allowing the transfer time of 10 Megabytes in three minutes.

Beam 3 - an optical ray tracer program for the design and analysis of advanced lens systems for the IBM and compatibles. This software will handle mixed systems having up to 30 surfaces including refractors, reflectors, diffraction gratings in transmission and reflection, lenses, null surfaces, and a final generalized detector surface.

Figure 8. (a) Catalog of software available for loan; (b) Alphabetical listing of software in collection



IBM & Compatible Software Available For Checkout

ACCOUNTING:
Quicken 2.0 ..... Intuit

ANALYTICAL ENGINEERING:
EnPlot 2.0 ..... ASM International
Stecal ..... ASM International

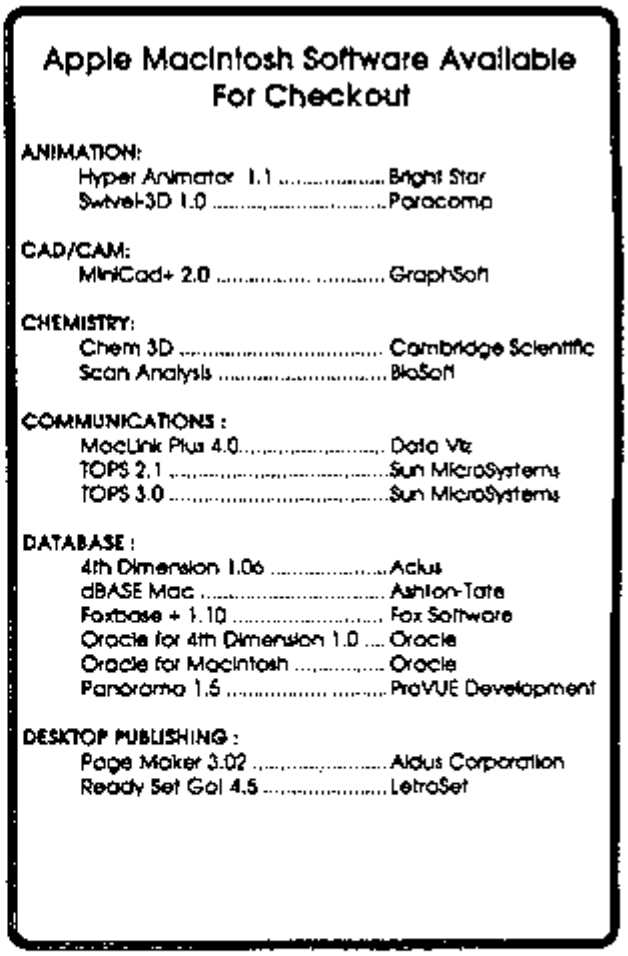
ANIMATION:
Acrospin 1.1 ..... AcroBits

CAD-CAM:
CCS Designer ..... Complete Computer
Design CAD ..... ASBC
Design CAD 3-D ..... ASBC
Draftx CAD 2.01 ..... Foresight Resources
Generic CADD 3.0 ..... Generic Software
ProDesign II 2.5 ..... ASBC

CAD-CAM Add-In/Utilities:
Auto-Dimensioning ..... Generic Software
Drafting Enhancements-2 ..... Generic Software

CHEMISTRY:
WIMP 6.0 ..... Aldrich Chemical

COMMUNICATIONS:
Cross Talk XVI 3.7.1 ..... Digital Comm.
Crosstalk for Windows 1.0 ..... Digital Comm.
Relay Gold 3.0 ..... Relay Comm.
SmartCom III 1.0a ..... Hayes
TOPS 2.1 ..... Sun Microsystems



Apple Macintosh Software Available For Checkout

ANIMATION:
Hyper Animator 1.1 ..... Bright Star
Swivel-3D 1.0 ..... Paracomp

CAD/CAM:
MiniCad+ 2.0 ..... GraphSoft

CHEMISTRY:
Chem 3D ..... Cambridge Scientific
Scan Analysis ..... BioSoft

COMMUNICATIONS:
MacLink Plus 4.0 ..... Data Viz
TOPS 2.1 ..... Sun MicroSystems
TOPS 3.0 ..... Sun MicroSystems

DATABASE:
4th Dimension 1.06 ..... Aclus
dBASE Mac ..... Ashton-Tate
Foxbase + 1.10 ..... Fox Software
Oracle for 4th Dimension 1.0 ..... Oracle
Oracle for Macintosh ..... Oracle
Panorama 1.5 ..... ProVUE Development

DESKTOP PUBLISHING:
Page Maker 3.02 ..... Aldus Corporation
Ready Set Go! 4.5 ..... LetraSet

Figure 8 *(cont.)*. (c) Listing of software by applications for IBM-compatible computers; and (d) Listing of software by applications for Macintosh computers

New software available for loan is also listed in the Library Accession List, which is issued once or twice a week. This list, which is distributed to all NRL staff who have asked to receive it, also serves as a request form when signed and returned to the library with requested items marked.

Articles highlighting new software purchases are frequently published in the Library Newsletter, issued roughly every other month, and in the bi-weekly Laboratory newspaper, Labstracts. Starting in January 1991, the Library's Microcomputer Software Support Center began to issue its own monthly newsletter and established a topic on the Laboratory BBS. Both will list new software acquisitions.

To highlight the availability of software for borrowing, software packages are located in four lockable glass-front cabinets in the front of the Library near the circulation desk. All software that is available for check-out can be immediately seen by prospective borrowers. These cabinets, which are directly opposite the reference area and within easy view of the circulation desk, are left unlocked during the day, so users can remove packages from the cabinet and look at the accompanying manuals and descriptive material. Notebooks containing the Spec Sheets describing each software program and the equipment necessary to run it are located near the cabinets. The cabinets themselves were custom built to our specifications. They have a depth of 15.5 inches, 3.5 inches deeper than the glass front bookcases or display cabinets usually found in library and office catalogs. This greater depth is needed to allow even over-sized software, which may be accompanied by loose-leaf notebooks, to be shelved like a book with the "spine" facing outward. After a period of experimenting with shelving software by title, we decided instead to shelve by call number.

Shelving by title led to a good bit of confusion both for the shelver and the user: e.g. is it Word or is it Microsoft Word? Now a quick catalog query tells us immediately.

- **THE SOFTWARE COLLECTION**

A basic decision in developing a software collection is what kind of equipment will be supported. Because library experience was exclusively with IBM-compatible equipment and that seemed to be the most popular microcomputing environment throughout the Lab, we decided to concentrate our initial efforts there. Consequently for the first nine months we purchased and circulated only DOS packages, although from the beginning we intended to expand the program to include Macintosh software. There was the not-unexpected criticism that we were neglecting the sizable community of Macintosh users. An analysis of computer purchases performed in October 1989 showed that NRL owned 2,794 microcomputers of which 1,801 were IBM-compatible and 866 were Apple computers including Macintoshes; these numbers would be substantially higher today. One delay in providing access to the Macintosh software was that we needed to purchase equipment to perform the disk backups and virus checking. Once that was accomplished we began to build our collection of Macintosh software and circulated our first Mac programs in May 1989. Today we have 330 packages for IBM compatible computers and 130 for Macintosh computers, which reflects that relative availability of relevant software for the two systems. We are considering expanding the program to include UNIX-based systems, which appear to be proliferating at the Laboratory.

Software Selection

In the beginning, the software purchased for circulation was the more popular office-automation types of programs: word processing, spreadsheets, graphics, and database programs. It quickly became evident that NRL users were perhaps even more interested in having scientific software available for evaluation as well. Model simulation, mathematics solvers, neural networks, optical design, pattern recognition, and signal processing programs were soon added. About 20% of the collection now comprises scientific software.

Recommendations by users continue to form the basis of what we buy. Programs that are highly publicized and presented as "hot" in the computer literature are also likely prospects. Obviously we cannot buy every program that comes along, so if we have, say, a number of graphics programs, the next one we buy will have to have some special capability. We have made a few mistakes and bought things that we thought the scientists would be excited about and then found that they weren't all that interested. As a result, our general rule is wait until someone suggests it; we have found the NRL researchers are not shy about making recommendations.

Adding Second Copies

Initially, we purchase only one copy of each software package. When the waiting list for that package is longer than 5 users, we consider the purchase of a second and perhaps third package. However, purchase of multiple copies is not automatic; our experience is that after the first flush of activity, interest dies down, and second and third copies frequently languish on the shelf. The decision to buy more copies is a balancing act between the cost of the package, which averages $400, and the urgency with which our users are expressing their frustration over waiting. One way we have addressed this problem is by purchasing second copies of highly popular programs for reference use. That way there is always a copy available that the user can look at on-site if the delay becomes intolerable. Reference software is housed in the Library's Microcomputer Software Support Center, which is described below. Also included in the reference collection are demonstration packages and review copies that have been provided to us by publishers.

New Versions or Releases

Unlike books, where new editions are relatively infrequent, software is characterized by the continuous announcement of new versions or releases. Keeping even a moderate size software collection up-to-date is a major effort. For major revisions of major packages, like WordPerfect, where the release of an update gets high visibility, there is no problem in making the latest version available to our users. However in many cases, it is only by religiously reviewing the computer literature that we find out about what software is being

upgraded. Our users often help us by requesting us to order upgrades they find out about before we do. Periodically we check our collection against published software lists to be sure we have the current version. In some cases an upgrade may be some additions or alterations to an existing package; in others it is a complete replacement. When the entire package is replaced, we generally retain the older version as a reference copy. For packages like Lotus 1-2-3 or Microsoft Word, where the vendor continues to offer more than one version, both versions may be retained as circulation copies. In the rare case where we have bought a package that is not being used, we of course do not update.

Public Domain Software in the Reference Collection

We circulate commercial software only. We do, however, collect public domain software for both the IBM and the Macintosh and make it available for downloading in our Microcomputer Software Support Center. For example, we have CD ROMs of both IBM and Mac software: the PC-SIG Library of public domain software for IBM-compatibles and the Apple Science CD for Macintoshes, which is issued by Apple and contains the National Council for Supercomputing Applications (NCSA) public domain software. We have recently started making available public domain software downloaded from bulletin boards (and virus-checked), and are looking at the purchase of other compilations of public domain software. Users are asked to provide their own disks for downloading.

Site Licenses and Bulk Purchases

With a view to providing users with retention copies of commercial software for permanent use, we have explored the feasibility of obtaining site licenses for popular software programs and of the alternative of purchasing multiple copies at substantial discount. While site-licensing appears on the surface to provide the greater savings, upon closer investigation it is found to place substantial demands upon internal resources, which would incur their own costs in terms of staff, equipment and space.

The purchase of multiple copies on the other hand can cut the purchase price by as much as half, reduce the time spent in preparing and processing procurement requests, and speed delivery, with much less effort on the part of the organization. A common scheme for site licensing is for a software manufacturer to provide the procuring organization with one master copy of both the software and the documentation; reproducing both software and documentation and getting it to the end user becomes the responsibility of the purchaser. In a variation of this plan, some companies provide one set of program disks and one set of documentation for every 5 or 10 users. We concluded that handling even one 1000-copy site license under either of these plans would overwhelm our resources. Savings of up to 75 percent are available under a site license providing that the number of users approaches the maximum allowed under the agreement, say 1000 users. If the usage is 500 instead of 1000, then savings drop to 50 percent. If usage exceeds 1000 users, the procuring organization is usually obliged to pay an additional fee, requiring that records be kept of the distribution of software and documentation. Before embarking on this approach, some basic issues need to be addressed. For example, how will the organization fund site licenses; will the Library's budget be increased to provide central funding or will users be charged for availing themselves of the site license? In the latter case how should costs be allocated since the total number of users is unknown and generally increases over the life of the site license?

At this point, the only bulk purchases we have made have been upgrades from WordPerfect 5.0 to 5.1. We ordered 98 copies of 5.1 for users already licensed to run the earlier version. This particular effort did not result in a great monetary saving because the cost of the upgrade was so low, but it did save time and effort by consolidating many individual purchases into two large ones. We are about to offer a similar upgrade to Microsoft Windows 3.0 to the NRL community.

Such purchases are relatively easy for the Library to handle. As part of its acquisition function, the Library purchases all books and journals required by NRL staff for use in their work. We therefore have mechanisms in place that allow users to request the Library to purchase materials and enable the Library to charge the user for the costs incurred. Although our procurement authority does not extend to software, which must be ordered through the Laboratory's Supply Division, these same mechanisms can be utilized. The difference is that instead of issuing a purchase order for software, we prepare a purchase request for Supply to prepare the

purchase order.

- **THE MICROCOMPUTER SOFTWARE SUPPORT CENTER**

The lending of software was an important, but only a first, step in assisting users to achieve the often elusive goal of enhanced productivity through the use of microcomputers. Although library reference staff were conversant in using existing catalogs and manuals and in searching online databases for software information, users appeared to need to interact with someone who had extensive microcomputer experience and who could serve as an advisor or software "guru." In October 1988, the Library took advantage of an existing Laboratory contract to bring such a person on board to serve as the principal contact for users requiring software information and to participate in the planning for future support services.

Providing a one-stop location where users could get information about and assistance in using software was an integral part of the Library's overall plan, but space limitations initially made this seem a distant goal. However, about the time we began to lend software in the summer of 1988, a computer room, located within the library but "owned and operated" by another part of the Laboratory, became available. This room proved to be quite suitable for a Microcomputer Center. It measures 36 x 26 feet, has a raised floor, and is only steps from the Circulation Desk and Reference Area. With a place to put a microcomputer center, the Library and its contractor staffing began to design a facility, order equipment and furnishings, and plan for services.

The center opened for business with a ribbon cutting by the NRL Commanding Officer on Sept. 7, 1989. The new Center offered IBM-compatible and Macintosh workstations for on-site use of software, a CD ROM user station for information searches and downloading of public domain software, a video station with software tutorials for individual or group use, a microcomputer for searching in-house databases, and IBM and Macintosh virus-checking stations. Staff dedicated to Center activities and support of the lending program had now grown to three: a manager, a program administrator, and a field technician, plus a summer student for data entry and clerical support. A few months later as workloads increased, an additional person was added to serve as the primary user contact for advice and training; later a full-time person was hired for routine operations, such as scanning, and clerical support. Staff has remained at this level for the past year; five people seem able to support the functions the Microcomputer Center is currently performing.

Information Services

The Microcomputer Support Center is organizationally and functionally an extension of our reference services. Just as reference librarians assist researchers in identifying and selecting books, articles, and reports to satisfy specific information inquiries, the systems analysts who staff the Microcomputer Center assist users in identifying and selecting the microcomputer software that best meets user requirements. Research tools in the form of CD ROM and on-line databases play a key role in enabling Center staff to respond to inquiries. All staff function as information professionals and view this as a principal duty, although each have other projects and assignments.

One of the first specialized research tools we introduced to provide users with microcomputer information, was a CD ROM product, which indexes over 100 computer publications and provides full-text of the contents of some major magazines. This product can be searched by end-users or by staff for rapid responses to inquiries about particular software packages or types of products. In addition to descriptions of particular programs, evaluative articles that compare and rate packages with a similar purpose can be quickly located to assist in selection. For the convenience of users, the latest issues of the more popular microcomputer periodicals are shelved in the Center; older issues are retained in the library stacks. CD ROM technology has proven so economical and useful for satisfying information queries that a second CD ROM product, which includes technology overviews, product reviews, vendor announcements, specifications and pricing will soon be added.

To meet the need for information about scientific software, an in-house database, called the Scientific Software Database, was created. To lay the foundation for this database, various catalogs and directories were searched, and commercial vendors, government facilities, universities, and laboratories were contacted for current information on scientific software they had developed. The database indexes and in many cases

abstracts the information content of about 1500 vendor brochures. The brochures themselves are all on file and can be retrieved by a database search. Future versions of this database will include scanned images of the brochures themselves.

An additional information source in the form of newsletters issued by computer user groups, software manufacturers and industry associations was introduced to help users stay abreast of the software field. This information complements the more formal publications that have traditionally been part of the Library collection.

The Center was planned as a one-stop facility to address all facets of microcomputer software support for NRL. In addition to providing a cadre of in-house consultants supported by the above-mentioned information tools, it facilitates microcomputer use at NRL by offering: a user evaluation lab where users can try out software and test new equipment; vendor demonstrations and expos for previewing microcomputer products and capabilities; and field support for solving a wide range of software-related problems, including disk recovery and virus checking;

The User Evaluation Lab

The User Evaluation Lab gives users the opportunity to "test-drive" software that their own computers might not be equipped to run, and to evaluate the usefulness of a variety of add-ons and peripherals. Fully-equipped IBM-compatible and Macintosh computers permit users to try out a wide range of software and many types of hardware add-ons. Computers have upgraded memory, graphics and accelerator boards, and large screen monitors. Peripherals available include color and laser printers, optical storage devices, and scanners. Short-term leases of new computers have enabled the Center to give NRL staff hands-on experience with the latest state-of-the-art technology providing users a "try-before-you-buy" opportunity. Systems that have been resident recently include a PS/2 model 70, a 486-based IBM-compatible, a Macintosh IIfx, and an Amiga 2500 with AmigaVision, a program for creating presentations, tours, tutorials, and self-running demos.

To help users evaluate the portable computer market, the Center purchased five portable computers, each by a different manufacturer. Four were DOS-based and the fifth a Macintosh. These computers are available for evaluation on-site or can be checked-out for travel, for work at home, or to take to presentations and briefings. User response to this program has been high, particularly in borrowing smaller, lighter computers (one weighs only eight pounds), A second Macintosh portable is on order.

One application that users can test out in the User Evaluation Lab is the optical scanning of library materials for electronic storage and retrieval. Two scanners are available; a greyscale scanner connected to a 386 machine running Windows 3.0 and a color/greyscale scanner connected to an Apple Macintosh IIx computer with an accelerator board. Appropriate software enables both to be used for Optical Character Recognition (OCR) and image scanning. Users are encouraged to explore optical scanning as an alternative to making a single photocopy for personal use of portions of journals, books or reference materials.

Although training, in the sense of providing formal classroom instruction, is not part of the Center's charter, staff do a lot of hand holding and individualized instruction to get people started in using new software programs and equipment. The combination of expert staff and a User Evaluation Lab creates an environment that encourages users to ask questions and staff to provide one-on-one training. What we do is quite informal, often unscheduled, and runs the gamut from helping someone get started with a particular package to sitting down with them and demonstrating how to use key features.

Field Support Services

As important as it is to help people decide what software they want, to give them a chance to try it out, to help them specify their systems, and to show them how it all works together, there still remains a final hurdle: what happens when the software and the system come together in the office or laboratory and for some reason do not work correctly? In response to the obvious needs of the user community for assistance in this area, the Microcomputer Center provides field support for both IBM and Macintosh systems. A great deal of problem-solving occurs over the telephone, but there are times when only a "house-call" will suffice.

In addition to resolving compatibility issues and identifying configuration problems that may keep new software from running properly, field support responds to distress calls that range from deleted files to hard disk crashes. In late 1989 when rumors of viruses were prevalent, field support staff helped NRL researchers and administrative staff remain confident by scanning systems and removing suspected viruses. A flyer sent out at that time told users, ". . .whether it's a major infection or just a common cold, the Software Support Center's PC Doctor will help your computer make a quick recovery."

In the course of helping users solve their problems, field support staff may identify a culprit that is both pervasive and pernicious. A case in point was a number of system crashes that occurred in close succession throughout the Laboratory, always involving one particular brand of floppy disk. An notice was published in the Laboratory newspaper alerting users to the problem and urging them to back up their data on other brands of floppies.

Showcasing Microcomputer Products

One of the major ways people find out about the "latest and greatest" in computing is by attending shows and expos. Soon after its opening, the Center hosted its first major vendor demonstration. Billed as ScannerFest '89, it was held in the Laboratory's Exhibit Room and featured data input devices and software from 26 vendors, 13 on each of the two days. Over 550 people attended this event.

In the spring of 1990, the Center held a Presentation Graphics Expo. Forty vendors, 20 each day participated. In addition to software, input and output devices, including film recorders and color printers, were featured along with workstations for engineering and modeling applications. Attendance for this Expo was estimated at 900.

On the average of twice a month, the Software Center hosts demonstrations of software products or computer systems. During the past six months vendors have demonstrated 12 products including scientific software, programming software, page layout software, graphics software, spreadsheet software, accelerator add-on cards, portable computers, new computer product lines, and video software for computer presentations.

The first anniversary of the Center, in September 1990, was celebrated with an open house and day-long demonstrations of three software products by vendors. A Windows 3.0 show, with 10 vendors, in December 1990, attracted about 250 people.

During the past few months, the Microcomputer Center has formed an NRL Macintosh Users Group, which currently has 110 members. As coordinator of this group, the Center recently hosted a day-long seminar on the capabilities of Macintosh's new System 7. About 150 attended this program. The Center has been selected to beta test this new system, permitting the NRL community to be among the first to preview it.

- **SUMMARY**

By expanding its role to provide access to microcomputer software and support the use of microcomputers, the Ruth H. Hooker Technical Library has taken an active role in alleviating some of the frustrations encountered by NRL researchers, administrators, and support staff as they strive for the often elusive goal of enhanced productivity through the use of microcomputers. Library services include: Providing information about software and hardware; lending software for test and evaluation; operating a user evaluation lab; showcasing microcomputer products; complementing formal training programs; and performing in-office troubleshooting. To perform this wide range of functions, the Library augmented its staff with a contract-operated Microcomputer Software Support Center, run as an extension of the Library's reference services.

Although the Microcomputer Software Support Center sometimes seems like the tail wagging the dog, its establishment and the services it provides have been helpful to the Library as well as to the NRL community. It has provided and is continuing to provide the Library with increased visibility throughout the Laboratory and the broader Navy community. One positive result is that the Library is recognized as an innovator, aware of technology and supportive in helping people use it. This appears to be working to the Library's advantage with greater involvement in planning for Laboratory computer and communications resources, such as the

installation of a fiber optic network, and high-level interest in and support for expanding existing library computer resources. Such expansion efforts include: an optical disk system, already installed, for storing the entire collection of reports (over 100,000 paper copies totalling 26,500,000 pages); procurement of a host computer (to be delivered in March 1991) and software for providing access to internally developed and perhaps leased databases; and the planned replacement of our current automated library system for one that will provide enhanced capabilities in the areas of information retrieval, database access, electronic storage, document delivery, and networking.

- **APPENDIX A. Libraries Surveyed on the Handling of Software as a Library Material**

  - Aetna Life & Casualty - Corporate Information Center
  - Alberta and Southern Gas Company, Ltd. - Information Center
  - American Bankers Association - Library
  - American Cyanamid Company - Agricultural Research Division - Technical Information Services
  - American Express - Travelers Cheque Operating Center - Systems Library
  - AT&T Bell Laboratories - Library Network
  - Bank of America - Research Library
  - Chevron Corporation - Corporate Library
  - Dow Chemical Company - Technical Information Services
  - Charles Stark Draper Laboratory, Inc. - Technical Information Center
  - E.I. du Pont de Nemours - Technical Library Network
  - Fermi National Accelerator Laboratory - Library
  - General Electric Company - Corporate R & D - Whitney Information Services
  - General Motors Corporation- Research Laboratories Library
  - IBM - Thomas J. Watson Research Center - Library
  - Johns Hopkins University Applied Physic Laboratory - R.E. Gibson Library and Information Center
  - Lawrence Berkeley Laboratory - Library
  - Lawrence Livermore National Laboratory - Technical Information Department
  - Los Alamos National Laboratory - Library
  - Martin Marietta Energy Systems, Inc - Libraries
  - Mitre Corporation - Library
  - National Center for Atmospheric Research - Library
  - National Institute of Standards and Technology - Research and Information Center
  - National Oceanic and Atmospheric Administration - Mountain Administrative Support Center - Library
  - Phillips Petroleum Company - R & D Library
  - Price Waterhouse - National Information Center
  - Sandia National Laboratories - Technical Library
  - Space Telescope Science Institute (NASA) - Library
  - Towers, Perrin, Forster & Crosby, Inc. - Corporate Information Center
  - Travelers Insurance Company - Corporate Library
  - TRW Defense Systems Group - Technical Information Center
  - Union Carbide Corporation - Library & Technical Information Service
  - U.S. Air Force - Eglin Air Force Base - Library Branch
  - U.S. Air Force - Lackland Air Force Base - Base Library
  - U.S. Air Force - Systems Command - Flight Test Center - Technical Library
  - U.S. Army - Armament Research, Development & Engineering Center - Scientific and Technical Information Division
  - U.S. Army - Fort Campbell - Post Library
  - U.S. Army - Information Systems Selection and Acquisitions Agency - Library
  - U.S. Army - Missile Command & Marshall Space Flight Center - Technical Library
  - U.S. Army - Pentagon Library
  - U.S. Army Corps of Engineers - Buffalo District - Technical Library
  - U.S. Army Corps of Engineers - Construction Engineering Research Laboratory - H.B. Zackrison Memorial Library
  - U.S. Army Corps of Engineers - Huntington District - Library
  - U.S. Army Corps of Engineers - Louisville District - Library
  - U.S. Army Corps of Engineers - Mobile District - Technical Library

- U.S. Army Corps of Engineers - New Orleans District - Technical Library
- U.S. Army Corps of Engineers - Seattle District - Technical Library
- U.S. Defense Mapping Agency - Aerospace Center Technical Library
- University of Wisconsin-Madison - Biotechnology Center
- Upjohn Company - Corporate Technical Library

- **APPENDIX B**

SURVEY ON HANDLING MICROCOMPUTER SOFTWARE AS A LIBRARY MATERIAL

NAME _____
LIBRARY/INSTITUTION _____ CITY/STATE _____ PHONE _____ YES NO

1. Does the library acquire microcomputer software

For circulation to library users ___ ___

For on-site use by library users ___ ___

(If NO to both questions, GO TO QUESTION 9.)

2. Does the library provide such access to

Public domain software ___ ___

Shareware ___ ___

Commercial software ___ ___

3. Does the library enter into any special agreements with software publishers prior to making software available to users.

Site License ___ ___

Specially negotiated agreement ___ ___

Other (Describe) ___ ___

4. Does the library catalog acquired software using AACR2. ___ ___

If NO, what system do you use? (Describe below)

5. How does the library inform users about software availability

Through its main catalog ___ ___

Through specialized listings ___ ___

Other (Describe) ___ ___

6. Does the library have special circulation policies or limitations on circulation of software. (If yes, describe). ___ ___

7. How does the library protect publicly-circulating software from tampering (Check all applicable).

_____ Write-protected diskettes

_____ Protective packaging

_____ Virus checking upon return

_____ Other (Describe).

8. How does the library protect publicly-circulating software from duplication (Check all applicable).

_____ Copy-protected diskettes

_____ Warnings on screen

_____ Warning on diskettes

_____ User agreements

_____ Other (Describe).

9. Does someone else in your organization provide any of the following software support services

Lending of software for test and evaluation ___ ___

On-site evaluation laboratory ___ ___

Information about the capabilities of software products ___ ___

Recommendation of software for particular applications ___ ___

Other (Describe). ___ ___

10. Is there someone else you can suggest that we talk to about the use of microcomputer software as a library material?

Name Library Phone

- **APPENDIX C. SCRIPT USED TO INTRODUCE TELEPHONE SURVEY**

After reaching person on list:

Good morning (or afternoon). My name is _____ and I'm calling from the Ruth H. Hooker Technical Library at the Naval Research Laboratory. Our Library Director, Laurie Stackpole, has been invited to write a paper for Library Trends on patron use of software in special libraries. As part of the information-gathering process, we are contacting a number of libraries to find out if they are circulating software or making software available to library users on-site. Would you have a few minutes to discuss your use of software for these purposes? (If no, find out when you can call back. If yes, begin by verifying information on name of contact, library, location, and phone. Then begin survey.)

If you are asked why that particular library was contacted.

For the first 8 on list: Mrs. Stackpole presented a paper on the circulation of software at the Special Libraries Association Annual Meeting in June 1988. At that time a representative of your library indicated that you would be willing to discuss your handling of microcomputer software for a Library Trends article.

For the remainder of the list: Mrs. Stackpole identified the libraries we are contacting based upon their standing in the special library community or the recommendations of colleagues.

If you are asked about the publication of results: Mrs. Stackpole's article is scheduled to appear in the Summer 1991 issue of Library Trends.

At the end of the survey, thank the respondent for participating.

- **REFERENCES**

1. Brimsek, Tobi A. (1989). From the Top: Profiles of U.S. and Canadian Corporate Libraries and Information Centers. Washington, D.C.: Special Libraries Association.

2. Raysman, Richard & Brown, Peter (1990). The Computer Software Rental Bill. New York Law Journal 204 (100), 23 November 1990, p. 3.

3. Rettenmaier, W.F., Jr. (1989). Selecting, Maintaining and Upgrading Software Collections. In Nelson, Nancy Melin (Chair), Computers in Libraries: Fourth Annual Conference & Exhibition, March 14-16, 1989 (pp. 119-120). Westport, CT: Meckler.

- **Captions for Figures**

Figure 1. Results of Survey by Type of Access (a) and Type of Software (b)

Figure 2. Agreement Card to Register As a Software Borrower

Figure 3. Notice of Copyright Label for Software Diskettes

Figure 4. Certification That Software Has Not Been Copied

Figure 5. Spec Sheet for Software Package

Figure 6. Typical Responses to User Survey on Software Lending

Figure 7. OCLC Cataloging Record Modified to NRL Specifications for Software

Figure 8. Catalog of Software Available for Loan (a); Alphabetical Listing of Software in Collection (b); Listing of Software by Applications for IBM-Compatible Computers (c); and Listing of Software by Applications for Macintosh Computers (d)

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webmaster@library.nrl.navy.mil

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Maintained by: Fred Rettenmaier